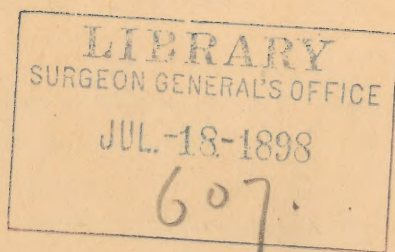


HRDLICKA (Ales)

Contributions to general
etiology + + + + +



January, 1896.

also Amer. Journal of Insanity, Jan. 1896.

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Contributions to General Etiology and Pathology of the Insane.

By DR. ALES HRDLICKA.

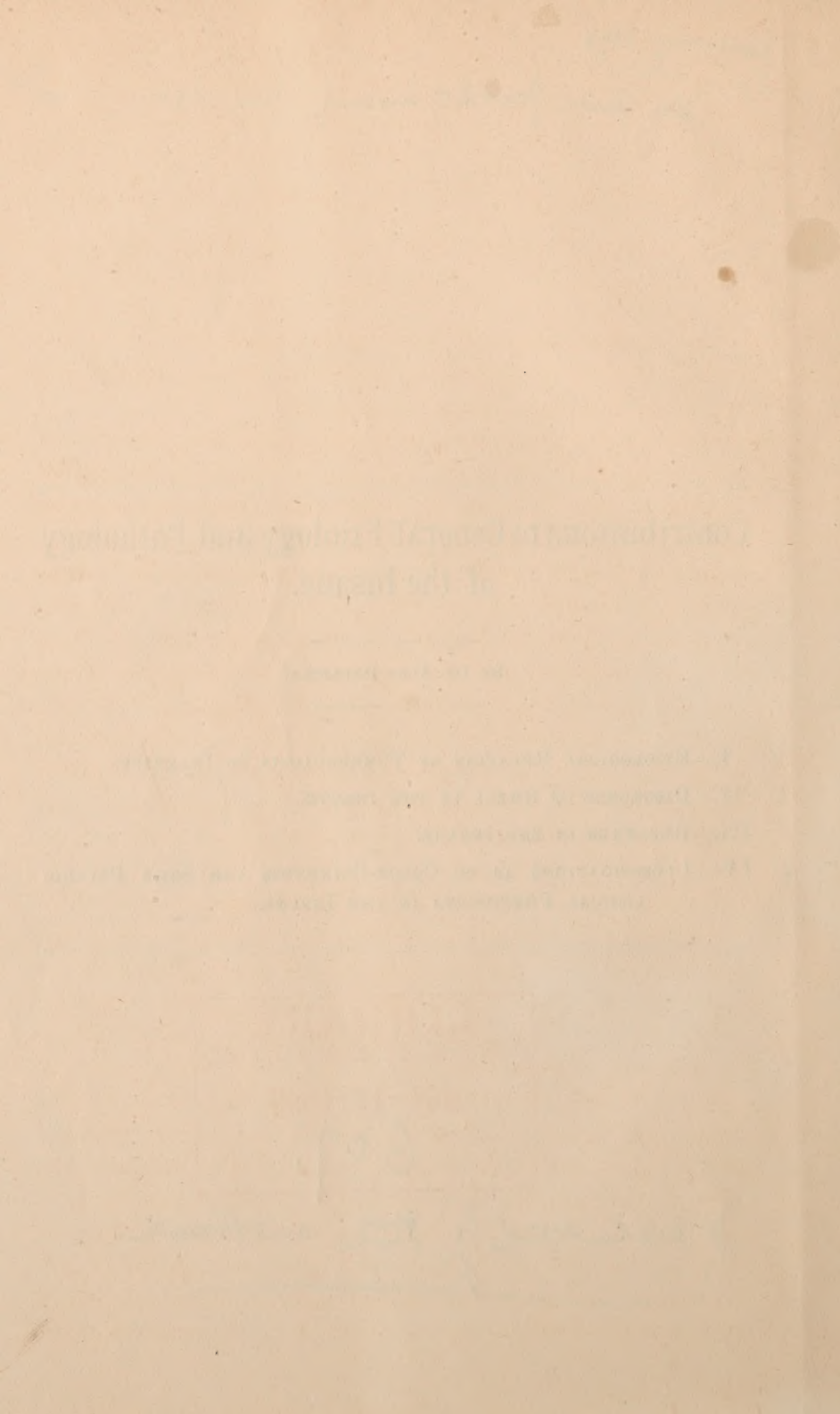
- ✓ I.—ETIOLOGICAL RELATION OF TUBERCULOSIS TO INSANITY.
 - ✓ II.—DISORDERS OF SMELL IN THE INSANE.
 - ✓ III.—REFLEXES IN THE INSANE.
 - ✓ IV.—INVESTIGATIONS AS TO COLOR-BLINDNESS AND SOME PSYCHOLOGICAL PHENOMENA IN THE INSANE.
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CONTRIBUTIONS TO GENERAL ETIOLOGY AND PATHOLOGY OF THE INSANE.

Mind, viewed objectively, is an undetermined nebula. It is a reality, that up to now has more or less eluded, through the subtlety of its nature, a physical reduction.

Mind is a great aggregation of phenomena, each of which has to have, if any natural laws are at all patent, its specific re-action of force with matter, or briefly, a physical cause. Any such re-action must have a certain cause of its own, and produced, certain duration, greatness, a definite situation of transaction, and consequently be capable of detection and explanation. In order to understand mind completely, we must determine all these re-actions with their qualities, and this can be done, without contest, but in one way: through scientific investigation. Theories, inductions and deductions are of value only as shades, that fill, and thus, more or less adequately, complete our concept of mind, and are only to be viewed as predecessors of facts established, that are in the end to displace them and of which solely the knowledge, the science, will be formed eventually.

Investigation, to establish the final knowledge, must comprise Mind entire; that is, all its possibilities; or, what is equivalent, all the minds. To effect this, they must be conducted from a double standpoint, the free, healthy, or normal, and the hindered, or abnormal mind must be examined, and this each with reference to causation, action and results.

Much, though comparatively little, has been done in this field; man, in order to render himself to, and prove effective in the highest and widest biological study, had to wait until the steps to this position, the collateral branches of science, were construed and reached a sufficient solidity; in order to establish psychiatry as a science, he had to wait for physics, chemistry and physiology. He, while waiting, had to throw off the yoke of old notions and prejudices. And again, with the discernment of the

complexity of the various phenomena, he had to divide and subdivide his inquiries, and much time has been absorbed by gross analysis of the complex nebula.

At last he has achieved so much, that he is ready for the definite analysis on which he is to build his decisions, his queen-science. The subject is definitely divided; one class of scientists studies the normal, the other the abnormal mind, while the individual investigators are taking up one special point after another, gathering statistics, proofs and observations. Of the individual field for study evolved grand psychiatric institutions and the hospitals for mind-diseased are speedily becoming great and prolific laboratories. Many an obscure point has been already elucidated. Philosophies have been almost reduced to psychology, which locates man's most abstract functions in definite spots of the brain, definite cells, and speeds to the conclusion that their origin must be sought for in delicate bio-chemical and bio-physical changes of those organs. Spirit is the function of the human being. Insanity is no longer a product of a "Change of the humors," or an affliction of the "Soul;" we now know it to be, though we be unable yet in some instances to prove it thus openly, a series of diseases of the encephalon, and even the term, "Disease of mind," is used but figuratively. Out of the old confusion of form of the diseases we have arrived at an almost perfect clinical classification, with which entire disorders *sui generis*, as, for instance, general paresis appeared. But notwithstanding, there are still many and many points, particularly, in the realm of abnormal mind, where clear insight would be of the greatest practical value, over which we stay in the dark.

The study of pathology of the mind presents far greater obstacles than that of its physiology, and in the main is the imperfection of the latter. If we knew the normal, it would not be so difficult to find the abnormal. As it is, these two branches of one study go hand in hand, level to level, each one supporting and clearing the other.

At such a stage of science, it is decidedly the duty of every individual observer to gather, investigate, compare his experiences with others, and record whatever is found new or unusual. It was

this thought that led me to the examination of a number of subjects of mental alienation, of the Middletown State Homoeopathic Hospital, with reference to a few points that, even if touched upon by some authors and observed piecemeal by others, have not been as yet, at least to my knowledge and sources of finding, taken up specially and presented collectively. Thanks to the liberality of the superintendent of the above named asylum, Dr. S. H. Talcott, and his first assistant physicians, Drs. Allen and Kinney, I have been given every opportunity which I needed for the accomplishment of my work, the records of which I beg to present herewith.

Let me give a few sentences of direct explanation: As a glimpse at the heading of this article shows, I have examined the patients on subjects the reliable information on some of which requires a certain amount of intelligence and compliance in the subject examined, and thus it happened that out of about 1,150 patients placed at my disposition and actually more or less examined, I have not been able to pick out more than 400, 200 of each sex respectively, of suitable cases. The answers have been certified and supplemented wherever possible, from the patient's papers of admission and history, uncertain cases being classed as "doubtful." The physical examinations were conducted with the care and precision so necessary with the insane; the methods of examination will be discussed with each special division of the article.

As to the aim of my work, I beg to say it is not to establish any new doctrines or theories: I have examined, found certain conditions, have not found their laws cleared, and consequently consider myself authorized to present these conditions found both, as facts and as a source of further considerations.

I.

Etiological Relations of Tuberculosis to Insanity.

That tuberculosis bears some relation to insanity, and *vice versa*, has been recognized by all those who ever gave this subject

any attention; that the first disease could stand in any etiological relation to the second, has been almost entirely overseen, or but superficially passed over. The physician of the insane saw his patients die three to five times as often from tuberculosis as the sane people, and he, with few exceptions, concluded and concludes disease of the mind predisposes its victims to the consumption, prepares them for it, without recognizing that such a fact is only too liable to be reciprocal.

That it is only the predisposition that insanity in time induces, is self evident from our knowledge of the real originators of tuberculosis, as well as from experience, which shows us that the mortality from it in the modern asylums can be reduced to, and below the general outside average. As an instance, let me mention the Middletown State Hospital, where, among 1,100 patients, there has been no death from phthisis within the last year, during which I had the opportunity to become acquainted with each of the deceased before the *exitus lethalis*, and with the majority of them at the autopsy table later. Nor is there any record of such a cause of death in the year previous; and at present, there are no more than four or five cases with consolidation, for the most part chronic, of the apices, with no one of the patients presenting any other signs of consumption. Such is the practical result attained by favorable climatic conditions of the hospital and strict hygiene, and it is only natural for it to be such; nevertheless I have no doubt whatever, but that the predisposition to phthisis exists among the inmates in this, as in like institutions, waiting only for the up to now here fortunately absent contagion. To the interpretation of this "predisposition" we will return somewhat later.

One of the first observers to point out some relation between these two diseases, was McKinnon, who as early as 1845, stated his conviction, that "the scrofulous and insane constitutions are nearly allied;" and that "lung-phthisis appears especially to stand in close connection with insanity." Landsberg (*Mania und Lungensucht*, *Rust's Magazine*, No. 64) believed that "insanity is often a result of phthisical dyscrasia." Hagan (*Allg. Zeitschr. f. Psychol*, vol. 7) expresses in his statistical dates and article,

that the "insane are five times as subject to tuberculosis as the sane," and also that in the phthisical insanity is five times as frequent as in the non-tuberculous. "Tuberculosis may be both, a causative or modifying cause of insanity" (Skae, Regis, Van der Kolk, Ball); and in a similar sense speaks Morel (*psychiatrie*, '60).

Of contemporaneous authors it is Clouston who has rendered the greatest attention to the relations of phthisis with insanity, and he quotes, in his article on phthisical insanity in Tuke's *Dict. of Psych. Med.* the following: "Perhaps two-thirds, or even more of idiots and imbeciles are of scrofulous constitution" (Ireland, *Idiocy and Imbecility*).

Van der Kolk (*Mental Diseases*): "It is remarkable, that in the very same family some of the children suffer from mania or melancholia, and the brothers and sisters, who have remained free from these diseases, die of phthisis."

Guisian (*Lecons orales sur les Phrenopathies*): "Pulmonary tuberculosis appears to me to be in direct relationship with insanity; it is frequently seen in the descendants of the insane and in their progenitors."

Dr. James quotes Thompson as showing that as to heredity, the two diseases are similar in the following respects: 1. Transmission is from either parent. 2. The disease may appear in the child, before it is developed in the parent. 3. The disease may be transmitted by the parent without development in himself. 4. "Atavism is a frequent and important characteristic." To which Clouston adds: 5. "The age at which the two diseases are most commonly developed is somewhat the same." Clouston believes the greatest risk of insanity is where both, phthisis and insanity, existed in the same family, more so than when either exists alone. In his text book on *Insanity* this same author speaks thus: "It is surprising how often both diseases, phthisis and insanity, occur in different members of the same family. They are too frequent to be a mere coincidence. The constitutional weakness which tends to end in phthisis is, I have no doubt, akin, in some degree, under some conditions, to that which tends to end in insanity."

All these propositions seem clear, absolute, and the etiological

relation of tuberculosis to insanity would appear by them established. And still, strange to say, however positive and clear to the point the majority of these statements seems to be, and although the very words used seem to speak for it, yet the etiological bearing of tuberculosis on insanity is by no means recognized. Almost all the authors of these statements neglect their own words and turn them to proof of the only fact seemingly apparent; insanity leading to phthisical dyscrasia and thus more or less directly to the large percentage of deaths of this disease in the asylums. Some of the first statements on this matter, as for instance that of Landsberg, were ventured so early in the day of psychiatry, that they are but mere sighs to the lucid future. But with the late observers it seems a kind of unexplainable oversight, not to have given a fact apparently important and intuitively observed their more extended and allsided attention. Take Clouston; he will clear points of resemblance of the two diseases; he will recognize their mixed occurrence in the same families, and therefrom arising greater gravity of both disorders; he goes even further and expresses directly his conviction of their being akin in some form and degree one to the other—and, as the only consequence, he tries to establish a new form of insanity, the one with which tuberculosis, the developed disease already, is directly associated; the phthisical insanity, so called; he has no word for the phthisical dyscrasia. And similarly all others.

At such a state of things, it is undoubtedly necessary to look into the subject a little closer. The most direct way to determine a point of this kind, is by statistical investigation; but, before we take recourse to any statistics, let us see clearly what is really disease of the mind and what consumption.

Tuberculosis, taken abstractly, is both, a cause and a result of certain general, or constitutional, but especially pulmonic weakness, and this weakness, which may be transmitted from parents to the progeny and take distinct shades in different individuals, we call *dyscrasia phthisica*. What is really dyscrasia? The cells of the normal system have the during evolution acquired power of resisting the more common, harmful influences, a self-

preservative power, or a power of resistance. This power is compound. And again, there is a general resistance, or, that common to all the cells of the body, and there is the resistance of each individual group of cells, or that of the various organs. Being an established function of all the cells, such a resistance must have its representation in the nervous centers, as all stable conditions or properties of the cells have, and these nervous areas must be, besides appreciative, (1) active, or reactive; and (2) related directly with other parts of the central nervous system, and, all other functions being related more or less with the entire central nervous system, this must by analogy be the same. These are not theories, for we can prove them by many examples. All changes of the function, its centers, or their connections, must necessarily correspond and be directly proportionate to each other. Perfect centers will keep up perfect resistance, imperfect resistance, if of sufficient duration, will affect correspondingly its centers and these the nervous entity. A temporarily diminished resistance of an organ is, according to its kind, its respective weakness. Permanent diminution of some form of resistance of a group of cells, is a corresponding form of dyscrasia. Dyscrasia, defined, is a permanent, inherited or acquired, defect of some form of natural resistance of one or more groups of cells of the human body. Phthisical dyscrasia is a loss of that form of resistance of the body, and especially of the lungs, which when present hinders a man from acquiring tuberculosis. Insanity is result of various extensive disorders of the brain, an organ, that at once is an organ of appreciation of all condition of the body, and an organ that more or less directly controls every part of the body. Now let any constitutional weakness, tuberculous or other, become established through long continued outward causes—and, before the specific disease of the dyscrasia sets in, what have you found but that the brain really, the tropic, sustaining reactive centers are weakened correspondingly? in other words how will you explain “dyscrasia,” except as resting on a nervous basis? Now, a nervous, a brain weakness of any kind, any extent, is a disorder, insanity is due to a brain disorder, and — how far are we from one to the other? Every dyscrasia is, in a strict sense, besides the

condition of the nervous system in general, a mild form of mental alienation; and as such, can it be other but one of the predisposing causes of the graver general brain disorders, the graver forms of mental alienation: the insanities?

Thus, and thus only I wish my words to be understood. I do not believe, with all the apparent facts I have, tuberculosis to be a cause of insanity, no more than I believe rheumatism or paludism to be such, but I will maintain, as the result of my investigation, that the results of tuberculosis in any of their forms, in other words tuberculous dyscrasia of any kind, is, just as any other dyscrasie, the gouty, syphilitic, rachitic, etc., one of the causes of disease of the mind, or insanity.

Looking through psychological literature, I find I am not entirely isolated in the substance of these opinions, a fact which gives me much confidence in their veracity. For Ball insanity is "not a malady that commences, but one that finishes." (*Lec. sur les Mal. Ment.*, p. 34). Speaking of the heredity of insanity, C. Mercier (*Tuke's Dict. of Psych. Med.*) says: "Much more important is the fact, far too insufficiently recognized, that the factor that is directly inherited is not insanity, but an instability or disordered arrangement of nervous tissue, which allows insanity to occur; and that we must look for the heritable antecedents of insanity not alone in insanity itself as existing in progenitors, but in all maladies which display evidence of undue instability or disorder of the highest nervous arrangements." And Krafft-Ebbing (*Psychiatria*, '93, p. 170): "There is no doubt that all that weakens the nervous system and the propagative powers of a person, leads to neuropathic constitution and thereby to all possible nervous disorders of the progeny." "A person does not inherit insanity, but a tendency or predisposition to it. The tendency inherited from the stock, not only from the immediate relations. A predisposition to insanity is not heritage of something definite and known passing from one generation to another in a definite and constant way, but rather of an uncertain bundle of obscure tendencies, which break up into various distributions." Maudsley (*Pathology of Mind*, '95). And again Maudsley, in the same work

and edition: "It is not the insane variation that is inherited but a native fault or flaw in the germ-plasm of the stock."

Thus supported, even though the citations were not written by their respective authors with the same points in view, I shall no more hesitate to assert tuberculous dyscrasia as one of the predisposing causes of insanity, and that of insanity in general, and will proceed to the direct statements, which are to prove the proposition.

My investigation consists of inquiries, which to render reliable I have employed all the means in my power. The cases of tuberculosis in the families of patients examined were divided into near, which comprise the parents, grandparents, brothers and sisters, and parents' brothers and sisters; and distant, or all other relatives beyond those named up to second cousins. Of the near I have specially extracted yet those of parents. The 200 of each sex examined comprise the following mental disorders: Mania, acute, recurrent and chronic; melancholia, acute and chronic; paranoia, epileptic insanity, general paresis, imbecility, terminal dementia, and a few miscellaneous cases. The respective numbers examined were:

	Men.	Women.
Mania, acuta	8	7
Mania, recurrent.....	2	13
Mania, chronic.....	35	22
Melancholy, acuta.....	14	17
Melancholy, chronic.....	17	34
Paranoia.....	20	56
Epileptic insanity.....	18	7
General paresis	5	..
Imbecility	11	5
Dementia, terminal.....	50	25
Miscellaneous	20	14

The results, given in percentage, are as follows:

Mania, Acuta.

	Per cent.	Per cent.
Near	25	71
Tuberculosis in family:		
Absent	25	14
Distant .....	..	14
Doubtful.....	50	..

Mania, Recurrent.

	Men, per cent.	Women, per cent.
Near	50	53.5
Parents .....	..	23.5
Tuberculosis in family :		
Distant .....	..	15.5
Absent	50	7.5
Doubtful .....	..	23.5

Mania, Chronica.

Near	34	43
Parents	9	19
Tuberculosis in family :		
Absent	15	19
Distant	3	..
Doubtful	48	38

Melancholia, Acuta.

Near	35.5	65
Parents	14	23
Tuberculosis in family :		
Distant	7	6
Absent	21.5	12
Doubtful	35.5	18

Melancholia, Chronica.

Near	47	44
Parents	18	9
Tuberculosis in family :		
Distant .....	..	9
Absent	29	20
Doubtful	23	26

Paranoia.

Near	30	43
Parents	5	16
Tuberculosis in family :		
Distant .....	..	4
Absent	30	22
Doubtful	40	31

Epileptic Insanity.

	Men, per cent.	Women, per cent.
Near	28	57.5
Parents.....	5.5	..

Tuberculosis in family :

Absent	22	..
Doubtful.....	50	43

General Paresis.

Tuberculosis in family :

Near	40	..
Absent	40	..
Doubtful	20	

Imbecility.

Tuberculosis in family :

Near	36	40
Parents .....	..	8
Distant	9	..
Absent.....	36	20
Doubtful	18	40

Dementia, Terminal.

Tuberculosis in family :

Near	22	44
Parents.....	22	18
Distant .....	..	8
Absent	26	16
Doubtful.....	52	32

The Total Average.

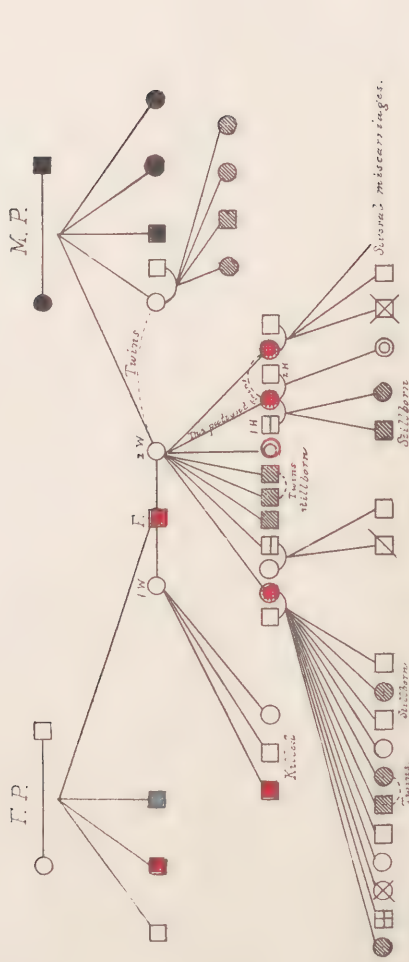
(Including few miscellaneous cases.)

Tuberculosis in family :

Near	32	47
Parents.....	9	17
Distant	2	8
Absent	25.5	17.5
Doubtful.....	40.5	29.5

Is more than a glimpse at these figures necessary to prove their importance? In men thirty-four, and in women fifty-three per cent. of tuberculosis in the family, and in the majority of cases of more than one member—could such phenomenon be without its value, without a considerable value? And these high numbers bear no trace of exaggeration, rather the reverse; the occurrence of the disease in the families of the patients is, if anything, greater, because: (a) Whilst cases of the disease in the immediate relation are remembered well, those in remote relation are not known of perhaps at all, or uncertainly, and such cases had to be included in the “absent” column; (b) in many cases there is more or less ignorance about the existence and whereabouts of the relatives, and consequently their fate is not known; in a few instances this ignorance included absolutely all the relatives, and these cases had to be classed with the “doubtful;” (c) in some cases the family history has been lost ever since the patient has been in the hospital, which might have been any period of the last ten years, and relatives might have succumbed to the disease in the meantime; some of these cases were classified with the absent (where the time was moderate), the rest with the doubtful; (d) some of the relatives, who might have transmitted the trait already and this produced its effects, may be still living and apparently well and may later, or may not at all, succumb to consumption; and (e) as only cases of pulmonary tuberculosis were inquired after, whilst the active disease presents many more types, which it would be impossible to ascertain, yet which can transmit the diathesis just as the pulmonary form, it is certain that many instances were omitted in this way.

The inheritance in the female predominates considerably over that in the male sex; it is a well known fact that the direct heredity of insanity is also greater in woman, and in somewhat similar relation of percentage, though I would not attach to this relation any specific importance. Both are due, no doubt, to the somewhat inferior resistance of the woman, and to the peculiarities of her mental and physical life. In the different forms of mental disease, if I may be permitted, for convenience, again to



T.P. fathers parents: M.P. mothers parents: T. fathers; 2.M. = first and second wife; 2.H. = first and second husband.

• Disēnisis - patiensis fānēr. Naif. broklor. fākhors broklor;

-accolism-fathers brother;

• for the construction of the product;

arthritis deformans; overtones; death from brain congestion at 16. now sig. v.

insano - 2 own sisters; first married, recovery; second partneria; patient a paranoiac. Dying.

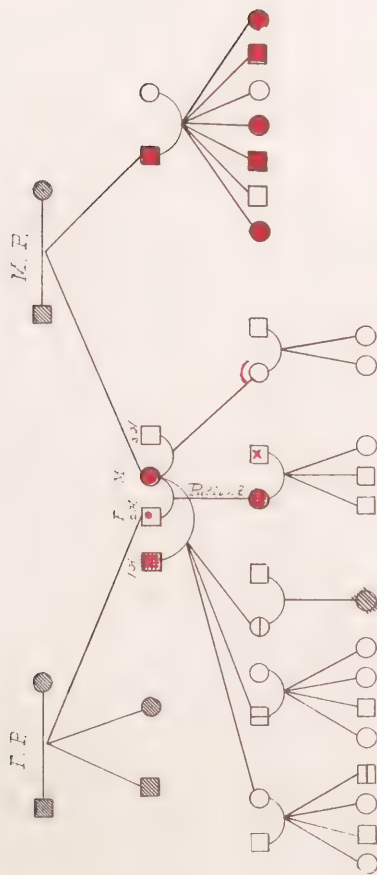
cause in all three - purpurium.

☐ art. trees; very feeble; ☒ = precocious; ☒ = hydrocephalus. born from the mother.

☒ racists; ● = class of epidemic; ○ = health

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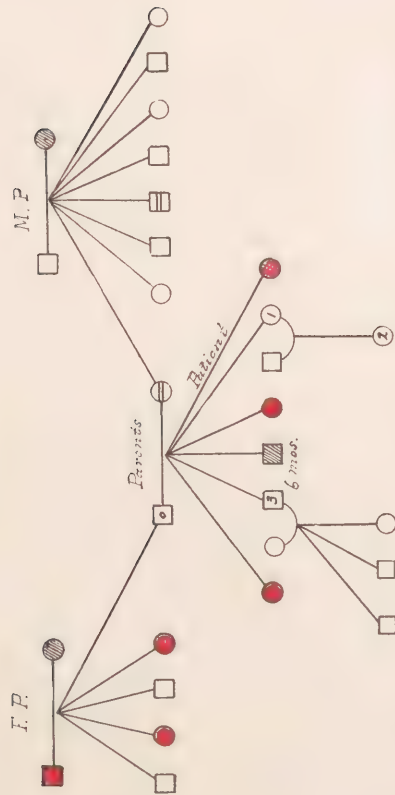
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- = dead, cause unknown;
- = insane; the patient, paranoiacal & residual catatonic; manic, pre-;
- = schizophrenia = molken, wide, five first cousins;
- = neural calculus,
- = cancer;
- = congenital feeble.
- = mentally poor;
- = subject to headaches, depressive;
- = absence of the brain, spontaneous; ○ = healthy or unknown.

III

Case 4171.



● phthisis, grandfather, two uncles and two sisters.

□ dysentery; maternal grandfather, father

▨ epilepsy (convulsions), mother, uncle.

● cause unknown.

1 = facie contracta, death at first child's birth. 2 = marasmus, death in two weeks.

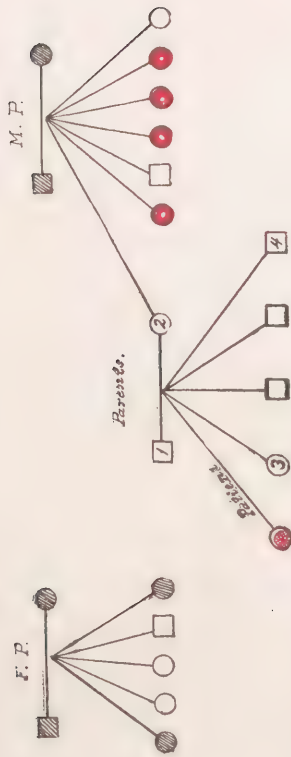
3 = chronic digestive troubles.

● the patient's symptoms and various examinations, following the first child's birth, mother's death, death

○ health or unascertained.

IV

Case 2704.



○ • normal;

● • phallicis, mothers four sisters;

● • head, ears unknown;

1. father, died of Bright's; severe rheumatism for many years;

2. mother, feeble (always); chronic bowel trouble; spontaneous cataract both eyes;

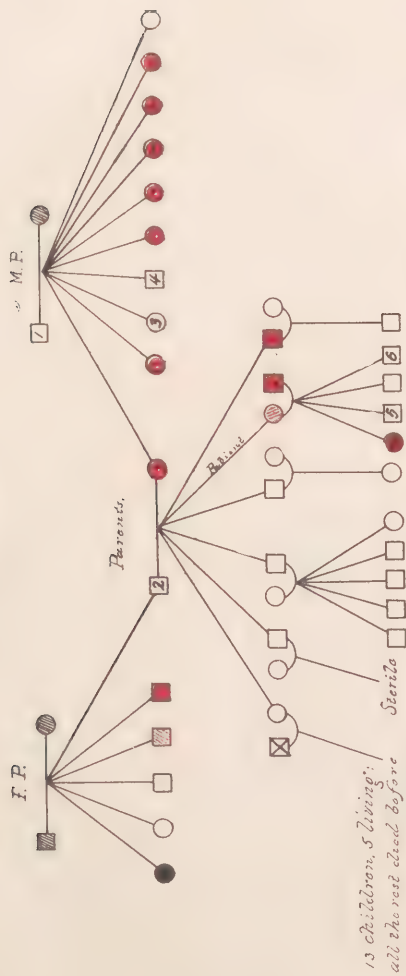
3. sister subject to convulsions;

4. brother had epilepsy up to 20; chronic rheumatism;

● • the patient. hypochondriacal melanolia; congenitally deformed,

(internal organs of generation).

V
Case 1945.



- 13 children, 5 living;
all the rest died before
puberty; few were still born.
1. father, religious mania, with political, dementia, cause overwork.
2. healthy.
3. dead, cause unknown;
4. phthisis mother; her six sisters father two brothers, one brother, a daughter;
5. mother father - alcoholism. Death of dysentery;
6. father, weak constitution. mine fabled when aged;
7. father, weak constitution;
8. chronic alcoholism, morphine habit;
9. marasmus, death at 9 days;
10. weak minded;
11. chronic lung cancer;
12. asthma (cardiac?).

employ that ambiguous term, there is an accord between the two sexes only in mania recurrent, chronic melancholia and imbecility; in all the other forms of alienation the "tare" in woman predominates, though a due allowance must be made for the respective numbers examined. Considering everything, the usual and, especially with the insane, the possible errors of information, and again the only too probable existence of positive cases among the doubtful, I think we can safely venture to state, that some form of tuberculous heredity or other exists in from forty to fifty per cent. of male, and in from fifty-five to sixty per cent. of female insane patients. Shall we still further neglect, in our etiology of insanity, a factor of such a potency?

As a termination to my article, I beg to append several genealogical tables. Taken at random, they will illustrate better than many words, the degenerative conditions in some of the families of the included patients:

II.

Disorders of Smell in the Insane.

Should one ask me what relation the organs of smell bear to insanity, I should have to admit, to the full extent of the word, I do not know, just as I do not know exactly what relation any other organs of special sense can bear to the disease; nor have I found anyone else who knows or even pretends to do so. But among twenty consecutive autopsies I made within the last two quarters of 1894 and the first quarter of 1895, I found five cases, or twenty-five per cent. where the olfactory nerves were in far advanced or complete states of degeneration, a fact which led me to the subsequent inquiries and examinations, the abstract of which is here presented. These autopsies were all made within twenty-four hours after death, so that the conditions found could not have been due to post-mortem changes.

It is remarkable how little attention the pathology of the olfactory nerve has yet received. Ziegler, in his great work on pathological anatomy (6 ed.), finds no place for this nerve, and the same is nearly true for Klebs, Green, and other general patho-

logists. Rosenthal and Groves make a few general remarks on it. The first observer says (*Dis. of the Nerv. Syst.*, p. 187): "In insanity, in which subjective olfactory sensations exist, softening of the olfactory nerve, neoplasms of the base of the brain extending to the anterior lobe, softening or discoloration of the olfactory bulb, and adhesions of the olfactory nerves to the dura mater, have been discovered." Speaking of anosmia, he does not even mention its occurrence among the alienated. Gowers thinks (*Nerv. dis.*, '88, p. 567), "anosmia is less frequently due to a lesion of the nerve than to disease of the mucous membrane of the nose, chronic inflammations, polypi, etc.," and "in diseases of the cerebral hemispheres, loss of smell is rare," and "functional loss occurs in hysterical hemianaesthesia" (568). Alienists, like Tuke, Krafft-Ebbing, Griesinger, Spitzka, Hammond, Ball, restrict themselves to the simple consideration of smell hallucinations. Erb (*Ziemen's Enc.*, vol. II, p. 262), acknowledges the existence of anosmia in the insane, but believes it "of central origin," and with similar results we may go from one investigator to another; and yet, direct examination on the living insane shows us a marked, to an absolute anosmia in thirty per cent. of the fair number of 400 examined, and all these were yet the more recent and lighter patients.

The same 200 of each sex were examined as in the first instance, and throughout, hence patients of enough intelligence to appreciate and respond to a feeling. Precautions were taken that each patient should know nothing of the nature of the examination before subjected to it. Cases of apparent nasal troubles or colds were avoided, or re-examined. In many cases the deficiency found was acknowledged as having been observed already by the patient himself.

The method of examination was as follows: Three test-tubes of a narrow calibre were taken and filled to about a half with (a) a ten per cent. solution of essence of peppermint in oil; (b) tincture of camphor; and (c) dilute ammonia. These test substances were not picked out entirely arbitrarily. They were chosen, first, as the most common and generally known flavors, and second, due to the

fact that many patients with a moderately dulled smell mistake one for the other, pronouncing *ol. menthae camphor.* and *camphor ammonia*. At about the upper end of the third fourth of each test-tube (from below), a somewhat tightly fitting sponge plug was placed; it served both as a preventive of spilling the contents, or some of the patients drinking them, and as a moderator of the odor.

Ol. menthae, having the most transient effect on the olfactory nerve of the three substances chosen, was used first in testing, and was followed by *camphor* and then *ammonia*, and enough time and trials were afforded before a decision was formed as to the state of the sense, in consequence there can not be, however delicate be such an examination, much error.

The cases as found were divided into three classes, namely, the normal, or about so, the moderately dulled, and the much dulled to absent. All those cases were classed as moderately dulled, which either had difficulty to recognize the test substances, though familiar with them in general, or who would not recognize one or another at all. Positive anosmia is not easily decided. In many cases where the olfactory nerve is largely affected, the innervation of the fifth is normal or the sensibility of this nerve seems to be even increased, and stronger smells, esp. *ammonia*, are recognized by this sensation and not the smell proper, and hence all such cases were, to avoid false conclusions, included with the "considerably dulled." I would here call again an attention to the fact, that the 400 examined represent practically the lighter cases, in which we would not expect the worst.

Smell, where deficient, was found so in almost all the cases on both sides. No records of hyperaesthesia of the sense were made, and that from the following reasons: Hyperaesthesia of smell is in most of its insane owners only subjective, or rather a pathological condition of the centers, and on examination of the organ, really an opposite condition is found, that is more or less of anosmia. And there are forms of intermediary state of affairs, I am sure, where the beginning of the degenerative process of the nerve the condition is manifested as both, outwardly as dulling of the sense,

and inwardly as its hyperaesthesia. Of course we are absolutely unable to divide such different cases one from the other. True cases of hyperosmia, that is those not dependent on any organic changes, or at least any such of longer duration, are rare, are liable to be periodical and occur mostly linked with hysteria.

The epileptics form an interesting class of their own; they have all a pronounced hyperaesthesia of the nasal branches of the trigeminus, whilst the olfactory in almost all is greatly dulled.

The following are the brief results of the examination; may they throw some light on one of the obscure phenomena connected with diseases of the mind:

Mania, Acuta.

Smell :	Men, per cent.	Women, per cent.
Normal	37.5	57
Mod. dulled	50	29
Dulled	12.5	14

Mania, Reccurens.

Smell :		
Normal	50	46
Mod. dull	50	15.5
Dulled .....	..	38.5

Mania, Chronica.

Smell :		
Normal	37	48
Mod. dull	40	28
Dulled	23	24

Melancholia, Acuta.

Smell :		
Normal	57	60
Mod. dull	21.5	23
Dulled	21.5	18

Melancholia, Chronica.

Smell :		
Normal	29	50
Mod. dull	41	20
Dulled	29	32

Paranoia.

Smell :	Men, per cent.	Women, per cent.
Normal	40	43
Mod. dull	25	35
Dulled	35	22

Epileptic Insanity.

Smell :		
Normal	5.5	28.5
Mod. dull	22	14
Dulled	72.5	57.5

General Paresis.

Smell :		
Mod. dull	40	..
Dulled	60	..

Imbecility.

Smell :		
Normal	45	40
Mod. dull	18	60
Dulled	36	..

Dementia, Terminal.

Smell :		
Normal	28	32
Mod. dull	40	20
Dulled	32	48

General Average.

(Few miscellaneous cases included.)

Smell :		
Normal	34	44.5
Mod. dull	33	26.5
Dulled	33	29.0

III.

Reflexes in the Insane.

Insanity has, as yet, no concomitant pathology of the nervous system in general, with the exception, perhaps, of general paresis and a few specific disorders, nor do I think, with our present knowledge, any such can be formed. Nerve disorders are by no means infrequent in mental disease and may be in most instances proven to be due to it and dependent on it, but they are so variable in the same form of insanity, and again the same symptoms occur irregularly in so many forms of the disease, that we are incapable to form, with regards to them, many definite conclusions.

Whenever the nervous system participates in any pathological process, be it substantially or sympathetically, the first affected are usually the parts controlled by the sympathetic, next come the special senses, then reflexes, and finally the voluntary nervous apparatus — gray nervous tissue first, white last. A year ago (Middl. St. Hosp. Report for '95, p. 173), I made quite an extended inquiry into the defects of sight and hearing in the insane, this year it is those of the smell, and then reflexes. Feeling and taste, the remaining two senses, although an effort was also made to inquire into their condition, had to be left out of consideration on account of the insurmountable difficulties such an examination presents with the insane; suffice it to say in this place, that both these senses present, in this class of patients, many highly interesting and often unsuspected deviations from the normal.

Irideal and patellar, the most important and decisive reflexes, were investigated only; in irideal both were examined, the light reflex and that of accommodation.

True nervous diseases existing outside and probably before the insanity (a fact remarkably rare) were excluded. The results of this examination are as follows:

Mania, Acuta.

Light:	Men, per cent.	Women, per cent.
Normal	75.0	57
Diminished	12.5	43
Absent	12.5	..
Irideal :		
Normal	62.5	57
Accomd'n : Diminished	37.5	43

REFLEXES.

Patellar:		
Normal	25.0	29
Accomd'n : Diminished	62.5	43
Increased .....	..	29
Absent	12.5	..

Mania Reccurens.

Light :		
Normal	50	69.0
Diminished	50	31.6
Irideal :		
Normal	50	84.5
Accomd'n : Diminished	50	15.5

REFLEXES.

Patellar:		
Normal .....	..	15.5
Diminished	100	53.5
Increased .....	..	31.0

Mania, Chronica.

Light :		
Normal	77	86
Diminished	20	14
Absent	3	..
Irideal :		
Normal	68	95
Accomd'n : Diminished	29	5
Absent	3	..

REFLEXES.

Patellar:	Men, per cent.	Women, per cent.
Normal	55	53
Diminished.....	15	28
Increased	29	14
Absent	3	5

Melancholia, Acuta.

Light:		
Normal	78.5	83
Diminished.....	21.5	18
Irideal:		
Normal	93.0	89
Accomd'n: Diminished.....	70	12

REFLEXES.

Patellar:		
Normal	43.0	65
Diminished.....	35.5	23
Increased	21.5	12

Melancholia, Chronica.

Light:		
Normal	77	74
Diminished.....	17	23
Absent	6	3
Irideal:		
Normal	73	77
Accomd'n: Diminished.....	12	23
Absent	6	..

REFLEXES.

Patellar:		
Normal	29	44
Diminished.....	29	32
Increased	35	20
Absent	6	3

Paranoia.

Light:		
Normal	85	84
Diminished	10	14
Absent	5	2

Irideal :	Men, per cent.	Women, per cent.
Normal	85	87
Accomd'n : Diminished.....	15	11
Absent .....	..	2

REFLEXES.

Normal	40	54
Diminished	25	22

Patellar :		
Increased	35	20
Absent .....	..	4

Epileptic Insanity.

Light :		
Normal	94.5	100
Diminished.....	5.5	..

Irideal :		
Normal	94.5	100
Accomd'n : Diminished.....	5.5	..

REFLEXES.

Patellar :		
Normal	67	28
Diminished.....	22	43
Increased	5.5	28
Absent	5.5	..

General Paresis.

Light :		
Normal	60	..
Diminished	40	..

Irideal :		
Normal	40	..
Accomd'n : Diminished	60	..

REFLEXES.

Patellar :		
Normal	40	..
Increased	60	..

<i>Imbecility.</i>		Men, per cent.	Women, per cent.
Light:			
Normal		91	60
Diminished.....		9	40

Irideal:			
Normal		100	80
Accomd'n: Diminished.....		..	20

REFLEXES.			
Patellar:			
Normal		54	40
Diminished		27	40
Increased		18	20

<i>Dementia Terminal.</i>			
Light:			
Normal		76	88
Diminished		22	12

Irideal:			
Normal.....		68	88
Accomd'n: Diminished.....		20	32

REFLEXES.			
Patellar:			
Normal.....		46	56
Diminished.....		22	28
Increased		26	16
Absent		4	..

General Average.

(Few miscellaneous cases included.)			
Light:			
Normal.....		79.0	79.0
Diminished.....		18.5	19.5
Absent		2.5	1.5

Irideal:			
Normal		77.0	84.0
Accomd'n: Diminished.....		21.5	15.5
Absent		2.5	0.5

REFLEXES.			
Patellar:			
Normal		47.5	48.0
Diminished.....		25.5	30.0
Increased		23.5	19.5
Absent		3.5	2.5

There are several things of interest in the above numbers. The most striking is the great predominance of variations of patellar reflexes over those of the irideal (5-2). The second is the large number of cases where the patellar reflexes were increased (86 cases). And the third, which, however, is not seen from the table alone, is a very frequently found peculiar state of opposite conditions existing between the patellar reflex and that of accommodation — where this latter was diminished, the former in a large majority of instances was found more acute. The general truth is, that the conditions of the different reflexes very seldom correspond with each other, and that is valent even about their irregularities.

IV.

Color-blindness, etc.

“The proportion of color-blind is about five per cent. or less among men, and two per cent. or less among women; this includes all the varieties and degrees of the defect” (Noyes, *Dis. of the Eye*, p. 17); among the 400 insane examined, color-blindness was found in only two men and one woman, which means respectively one and one-half of one per cent.; and all these three cases were of a light character.

The method of examination differed somewhat from the usual one. Instead of using a skein of colored letters, solutions representing the seven rainbow colors were placed in narrow glass tubes, which were arranged in a frame of three by four inches. This method is very simple and, I believe, very efficacious. According to the inclination of the frame towards the light, the tubes may be brought closer together and where it seems necessary, the light may be transmitted through the tubes and forms almost a perfect spectrum on a white paper behind, which adds to the instrument a further value. I must acknowledge the almost negative results of this examination surprised me, though even with such a number the possibility of accidental can not be excluded.

The last class of phenomena I inquired into is of a pure psychological order and the most obscure; it comprises few of purely psychical inclinations as found in the insane patients.

It is commonly acknowledged that in every individual there is such a thing as a "nature;" a psychologist would state, every organization is slightly different from all others, and correspondingly different are its psychical manifestations; and both, the laic and the scientist, know, that there are certain classes of these "natures." They are natural or inborn inclinations of faculties and should not be mistaken for temperaments, which mean the ways of action and reaction of a being.

The inclinations of man's faculties are triple: Attraction towards an object; indifference to it; or aversion. Noticing these phenomena in the insane with relation to objects both well defined and of common interest: to the different sciences, I soon found some peculiarities that promised me a closer and extended investigation into the subject would not rest without a due recompensation. I decided to choose the sciences preferred in schools — when the being is guided by the most natural, his virgin inclinations, for it is these and not any that may have been acquired or modified by exigencies, duty or reason, that are of true and prime psychological value. The investigation was conducted necessarily entirely by personal inquiry with each patient; the method pursued was to ascertain first if the examined had or had not a sufficient education; next, if he had sufficient, how he learned; and last, which of the various branches of learning he preferred most. Here are the results:

Mania, Acuta.

Subjects preferred in learning:	Men, per cent.	Women, per cent.
Geography	12.5	43
Mathematics.....	12.5	....
None, or miscellaneous.....	25.0	14
Too little school	50.0	43

Mania Recurrens.

Subjects preferred in learning:		
Geography	50.0	23.5
History .....	....	31.0
Mathematics.....	50.0	31.0
None or miscellaneous.....	....	7.5
Too little school .....	....	7.5

Mania, Chronica.

Subjects preferred in learning :	Men, per cent.	Women, per cent.
Geography	15.0	14.0
History	15.0	14.0
Mathematics	20.0	19.0
None or miscellaneous.....	3.0	3.0
Too little school.....	17.0	24.0

Melancholia, Acuta.

Subjects preferred in learning :		
Geography	7.0	18.0
History	21.5	50.0
Mathematics.....	35.5	18.0
None or miscellaneous.....	14.0	12.0
Too little school	21.5	6.0

Melancholia, Chronica.

Subjects preferred in learning :		
Geography	6.0	26.0
History	6.0	26.0
Mathematics	23.0	....
None, or miscellaneous.....	41.0	26.0
Too little school	23.0	20.0

Paranoia.

Subjects preferred in learning :		
Geography	25.0	16.0
History	10.0	31.0
Mathematics	35.0	7.0
None, or miscellaneous.....	25.0	31.0
Too little school	5.0	13.0

Epileptic Insanity.

Subjects preferred in learning :		
Mathematics.....	61.0	14.0
None, or miscellaneous	22.0	57.5
Too little school	17.0	28.5

Imbecility.

Subjects preferred in learning :	Men, per cent.	Women, per cent.
Geography	27.0	...
History .....	....	10.0
Mathematics	18.0	35.0
None, or miscellaneous	45.0	55.0
Too little school	9.6	....

General Paresis.

Subjects preferred in learning :		
Mathematics	80.0	....
None, or miscellaneous .....	....	....
Too little school	20.0	....

Terminal Dementia.

Subjects preferred in learning :		
Geography	12.0	8.0
History	10.0	8.0
Mathematics	22.0	4.0
None, or miscellaneous	44.0	60.0
Too little school	12.0	20.0

General Average.

Subjects preferred in learning :		
Geography	13.5	14.5
History	9.5	22.5
Mathematics	28.5	17.5
None, or miscellaneous	32.5	27.5
Too little school	16.0	17.0

Several very apparent deductions can be drawn from the tables:

History (and abstract sciences) is much more favored by women and especially by the female melancholiac and paranoiac. Mathematics form almost an exclusive preference with the epileptics and in general paresis. Most indifferent and illiterate are among the terminal dementes.

Strong musical inclination is very prevalent (23 per cent.) among female, and slightly less among the male paranoiacs; but many of these insane soon lose the best of their qualities of composing, playing and singing.

Artistic tendency is very pronounced, and almost general, in several species of insanity (viz. Lombroso, *Genie*, p. 284); it is common with paranoiacs. I have several pictures made by paranoiacs, and that in some instances almost untrained ones, that are worth looking at, at least; and the local journal of the Middletown State Homeopathic Hospital bears many a trace of "insane" inspiration, that is worth a perusal. I regret the already acquired extent of my article prohibits me from introducing a few examples, and of speaking of this interesting subject more in extent. * * *

I conclude. I have tried to do my work sincerely, may it be thus accepted; and may its imperfections be only a stimulus to others!



